

In the Claims:

Please cancel claims 4, 6, 8, without prejudice, and amend claims 1-3 and 10-16 as follows:

1. (Currently Amended) A method for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

dynamically generating an index corresponding to the retrieval condition if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison; and

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

2. (Currently Amended) A method for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

determining whether or not a first index which satisfies a condition wider than the retrieval condition exists among already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

dynamically generating a second index which satisfies only the retrieval condition by using the first index, if the first index which satisfies the wider condition exists; and

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated second index.

3. (Currently Amended) A method for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

determining whether or not two or more indexes which satisfy the retrieval condition by being combined exist among a plurality of already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

dynamically generating an index corresponding to the retrieval condition by combining the two or more indexes, if the two or more indexes exist;~~and~~

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

4. (Cancelled)

5. (Previously presented) The method according to claim 1, further comprising:

determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

deleting the index prior to start of the access process, if the access performance is degraded.

6. (Cancelled)

7. (Previously presented) The method according to claim 2, further comprising:

determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

deleting the index prior to start of the access process, if the access performance is degraded.

8. (Cancelled)

9. (Previously presented) The method according to claim 3, further comprising:

determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

deleting the index prior to start of the access process, if the access performance is degraded.

10. (Currently Amended) A computer-readable storage medium on which is recorded a program for causing a computer to execute a data retrieval process from a database according to retrieval conditions set forth in an issued SQL sentence, when the data retrieving process is being used by the computer, said process comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

dynamically generating an index corresponding to the retrieval condition if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison; and

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

11. (Currently Amended) A computer-readable storage medium on which is recorded a program for causing a computer to execute a data retrieving process from a database according to retrieval conditions set forth in an issued SQL sentence, when the data retrieving process is being used by the computer, said process comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an

index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

determining whether or not a first index which satisfies a condition wider than the retrieval condition exists among already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

dynamically generating a second index which satisfies only the retrieval condition by using the first index, if the first index which satisfies the wider condition exists; and

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated second index.

12. (Currently Amended) A computer-readable storage medium on which is recorded a program for causing a computer to execute a data retrieval process from a database according to retrieval conditions set forth in an issued SQL sentence when the data retrieving process is being used by the computer, said process comprising:

parsing the issued SQL sentence;

making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

determining whether or not two or more indexes which satisfy the retrieval condition by being combined exist among a plurality of already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

dynamically generating an index corresponding to the retrieval condition by combining the two or more indexes, if the two or more indexes exist;~~and~~

managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index;

deleting the dynamically generated index according to management status of the managed data; and

dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

13. (Currently Amended) Apparatus for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

a parsing device parsing the issued SQL sentence;

an access process optimizing unit making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

a dynamic index generating unit generating an index dynamically corresponding to the retrieval condition if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;~~and~~

a management unit managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index and deleting the dynamically generated index according to management status of the managed data;
and

an access processing unit dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

14. (Currently Amended) Apparatus for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

a parsing device parsing the issued SQL sentence;

an access process optimizing unit making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

an index managing unit determining whether or not a first index which satisfies a condition wider than the retrieval condition exists among already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

a dynamic index generating unit dynamically generating a second index which satisfies only the retrieval condition by using the first index, if the first index which satisfies the wider condition exists;~~and~~

a management unit managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index and deleting the dynamically generated index according to management status of the managed data;
and

an access processing unit dynamically retrieving the data from the database without user interaction, by using the dynamically generated second index.

15. (Currently Amended) Apparatus for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

a parsing device parsing the issued SQL sentence without user interaction;

an access process optimizing unit making a comparison, immediately after parsing the issued SQL sentence, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

an index managing unit determining whether or not two or more indexes which satisfy the retrieval condition by being combined exist among a plurality of already generated indexes, if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison;

a dynamic index generating unit dynamically generating an index corresponding to the retrieval condition by combining the two or more indexes, if the two or more indexes exist;~~and~~

a management unit managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index and deleting the dynamically generated index according to management status of the managed data;
and

an access processing unit dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.

16. (Currently Amended) Apparatus for retrieving data from a database according to retrieval conditions set forth in an issued SQL sentence, comprising:

parsing means for parsing the issued SQL sentence;

access process optimizing means for making a comparison, immediately after parsing the issued SQL sentence without user interaction, between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated dynamically and a cost required when retrieval is performed without generating an index dynamically;

dynamic index generating means for generating an index dynamically corresponding to the retrieval condition if the cost required when the retrieval is performed without generating an index dynamically is higher as a result of the cost comparison; and

management means for managing data of the number of accesses, a generation date and time, and an update frequency of the dynamically generated index and deleting the dynamically generated index according to management status of the managed data; and

access processing means for dynamically retrieving the data from the database without user interaction, by using the dynamically generated index.